WHAT IS CLAIMED IS:

1. An optical inspection system for inspecting at least one structure on a surface of an object, said system comprising:

a first visual light source which illuminates the surface of the object and the structure with a light at a first visual frequency;

a first laser light source which illuminates the surface of the object with a narrow coherent laser beam simultaneously with illumination by the first visual light source, said laser beam being at a second visual frequency that is different from the first visual frequency of the visual light source, said first laser light source being mounted off vertical on a movable mount which enables the laser beam to be directed over an area of interest on the surface of the object;

a color scan camera mounted vertically above the object, said camera having a first channel which captures an image of the illuminated surface of the object and the structure at the first visual frequency, and a second channel which captures a path of the laser beam as it strikes the surface of the object and the structure at the second visual frequency; and

a computer which determines two-dimensional structure information from the image at the first visual frequency, and determines height information for the structure from the path of the laser beam at the second visual frequency.

2. The optical inspection system of claim 1 further comprising a second visual light source mounted on an opposite side of the object from the first visual light source, said second visual light source illuminating the surface of the object and the structure with a light at a third visual frequency.

3. The optical inspection system of claim 2 wherein the color scan camera includes a third channel which captures an image of the illuminated surface of the object and the structure at the third visual frequency.

4. The optical inspection system of claim 3 wherein the computer also determines two-dimensional structure information from the image at the third visual frequency.

5. The optical inspection system of claim 4 wherein the color scan camera includes means for making a continuous series of exposures as the camera scans the surface of the object.

6. The optical inspection system of claim 5 wherein the means in the color scan camera for making a continuous series of exposures includes means for varying the length of each exposure.

7. The optical inspection system of claim 6 wherein the computer includes means for integrating the height information over the length of an exposure to calculate an average height.

8. The optical inspection system of claim 1 further comprising a second laser light source mounted on a side of the object which is displaced 90 degrees from the first laser light source, said second laser light source illuminating the surface of the object in a path that is perpendicular to the path illuminated by the first laser light source.

9. A method of inspecting at least one structure on a surface of an object, said method comprising the steps of:

illuminating the surface of the object and the structure with a first visual light at a first visual frequency;

simultaneously illuminating the surface of the object with a first narrow coherent laser beam at a second visual frequency that is different from the first visual frequency, said first laser beam striking the surface of the object at an angle of incidence less than 90 degrees;

directing the laser beam in a path covering an area of interest on the surface of the object;

capturing an image of the illuminated surface of the object and the structure at the first visual frequency utilizing a first channel of a color scan camera mounted vertically above the object;

simultaneously capturing the path of the laser beam at the second visual frequency utilizing a second channel of the color scan camera as the laser beam strikes the surface of the object and the structure;

determining two-dimensional structure information from the image at the first visual frequency; and

determining height information for the structure from the path of the laser beam at the second visual frequency.

10. The method of inspecting at least one structure ~~on a surface~~ of an object of claim 9 further comprising illuminating the surface of the object and the structure with a second visual light at a third visual frequency, the second visual light being mounted on an opposite side of the object from the first visual light.

11. The method of inspecting at least one structure on a surface of an object of claim 10 further comprising simultaneously capturing an image of the illuminated surface of the object and the structure at the third visual frequency utilizing a third channel of the color scan camera.

12. The method of inspecting at least one structure on a surface of an object of claim 11 further comprising determining two-dimensional structure information from the image at the third visual frequency.

13. The method of inspecting at least one structure on a surface of an object of claim 12 wherein the step of simultaneously capturing the path of the laser beam includes making a continuous series of exposures with the color scan camera as the camera scans the surface of the object.

14. The method of inspecting at least one structure on a surface of an object of claim 13 wherein the step of making a continuous series of exposures includes varying the length of each exposure.

15. The method of inspecting at least one structure on a surface of an object of claim 14 further comprising integrating the height information over the length of an exposure to calculate an average height.

16. The method of inspecting at least one structure on a surface of an object of claim 9 further comprising illuminating the surface of the object with a second laser light source mounted on a side of the object which is displaced 90 degrees from the first laser light source, said second laser light source illuminating the surface in a path that is perpendicular to the path illuminated by the first laser light source.